

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: JOHN M. BELCEA

TITLE: TIME DIVISION PROTOCOL FOR AN AD-HOC, PEER-TO-PEER  
RADIO NETWORK HAVING COORDINATING CHANNEL ACCESS  
TO SHARED PARALLEL DATA CHANNELS WITH SEPARATE  
RESERVATION CHANNEL

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EXAMINER:

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To: The Commissioner of Patents and Trademarks  
Washington, D. C. 20231

P R E L I M I N A R Y A M E N D M E N T

Sir:

In advance of the first office action, 1997, please amend the above-identified  
application as follows.

IN THE CLAIMS:

Cancel claim 1, and add the following new claims.

CLAIM 51. A radio terminal for an ad-hoc, peer-to-peer radio system comprising a series of radio terminals, each said radio terminal comprising transceiver means for transmitting and receiving signals from other like terminals of said series of terminals, computer means, memory means for storing program software means therein, and software means, said radio system based on time-dependent messaging having multiple parallel data channels and a control channel, the improvement comprising:

    said software means comprising means for generating communications-information for transmission based on time-division messaging;

    said communications-information comprising a series of time frames (TM) each divided into a series of time slots (TS); said communications-information comprising at least one time slot in which control-channel (CC) messaging information is transmitted, and other time slots in which is transmitted channel data (CD) messaging information;

    said software means further comprising sending means for sending out message-signaling toward other said radio terminals for finding and registering with at least one other of said other radio terminals;

    said sending means comprising transmitting status messaging over said control channel;

said software means also comprising listening means for listening to a response to said status messaging from at least another said radio terminal on said control channel;

    said software means further comprising random means for randomly selecting at least another said time slot of at least one subsequent said time frame for said sending means to transmit said status messaging when said listening means receives no response;

    said software means comprising power-incrementing means for increasing the power of transmission of said status messaging over a subsequent, selected, respective said time slot as compared with a previous said time slot in which said status messaging was transmitted.

CLAIM 52. The radio terminal for an ad-hoc, peer-to-peer radio system according to claim 51, wherein said power-incrementing means continually increases the power level for each subsequent said time slot until a maximum level has been reached;

    said software means further comprising identifying means for identifying said radio terminal as being isolated and for setting said radio terminal as a root of an isolated network (IN) if said listening means does not receive a response from said status message after said power-incrementing means has sent out over a time slot at said maximum power level.

CLAIM 53. The radio terminal for an ad-hoc, peer-to-peer radio system according to claim 52, wherein said random means sends out said status messaging from said sending means at a random rate varying between a first, preselected minimum time and a

maximum time N determined by three times the number of member-terminals in said isolated network (IN).

CLAIM 54. In a radio terminal for an ad-hoc, peer-to-peer radio system comprising a series of radio terminals, each said radio terminal comprising transceiver means for transmitting and receiving signals from other like terminals of said series of terminals, computer means, memory means for storing program software means therein, and software means, said radio system based on time-dependent messaging having multiple parallel data channels and a control channel, the method comprising:

- (a) generating communications-information for transmission based on time-division messaging;
- (b) said step (a) comprising generating a series of time frames (TM) each divided into a series of time slots (TS);
- (c) said step (b) comprising dedicating at least one time slot for control-channel (CC) messaging information is transmitted, and other time slots in which is transmitted channel data (CD) messaging information;
- (d) sending out message-signaling toward other said radio terminals for finding and registering with at least other radio terminal;
- (e) said step (d) comprising transmitting status messaging over the control channel;
- (f) listening to a response to said status messaging from at least another radio terminal on the control channel;

(g) randomly selecting at least another time slot of at least one subsequent time frame for retransmitting the status messaging when said step (f) did not hear a response from another terminal;

(h) incrementally increasing the power of transmission of the status messaging over a subsequent, selected, respective time slot as compared with a previous time slot in which said status messaging was transmitted, and repeating said step (e) using the new time slot in the new time frame.

CLAIM 55. The method according to claim 54, wherein said step (h) comprises continually increasing the power level for each subsequent time slot until a maximum level has been reached; and further comprising:

(i) identifying the radio terminal as being isolated and for causing the radio terminal to be a root of an isolated network (IN) if said step (f) does not receive a response from the transmitted status message after said step (h).

CLAIM 56. The radio terminal for an ad-hoc, peer-to-peer radio system according to claim 54, wherein said step (g) comprises sending out the status messaging at a random rate varying between a first, preselected minimum time and a maximum time  $N$  determined by three times the number of member-terminals in the isolated network (IN).

R E M A R K S

The present amendment has been submitted in order to add new claims 51-56. No new matter has been added.

Respectfully submitted,

By: 

Milton S. Gerstein  
Reg. No. 27,891

HAMMAN & BENN  
10 S. LaSalle Street  
Suite 3300  
Chicago, Illinois 60603  
(312) 372-2926 (Ext. 130).

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